

CLAIMS

What is claimed is:

1 1. In a wireless cellular communication system comprising a base station
2 and at least one repeater communicating over a wireless backhaul link for
3 communicating with a plurality of mobile subscribers, a method for improved
4 backhaul efficiency, comprising the steps of:

5 dynamically assigning for said backhaul link at least one packet
6 channel for transmission of selected packets on a backhaul signal for a subscriber,
7 said at least one packet channel comprising at least an RF frequency and a channel
8 definition; and

9 transmitting said selected packets on said at least one packet channel
10 between said at least one repeater and said base station.

1 2. The method according to claim 1, further comprising the step of
2 performing said assigning step in response to a request for communicating over
3 said backhaul signal for one of said plurality of mobile subscribers.

1 3. The method according to claim 2, wherein said request include
2 a priority field.

1 0 (4.) The method according to claim 3, further comprising a comparing step
 2 wherein said data priority fields are compared to determine whether to terminate
 3 transmission of a lower priority transmission to allow transmission of a higher
 4 priority transmission.

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5. The method according to claim 1, further comprising the step of
 2 dynamically reassigning at least a portion of said assigned packet channel for
 3 transmission of a second backhaul signal.

6. The method according to claim 1, wherein said channel definition
 2 includes a set of parameters which define said packet channel, said parameters
 3 comprising at least one of:
 4 a. a number of said selected packets which can be sent over said
 5 assigned packet channel; and
 6 b. a number frames allocated for transmission of said selected
 7 packets.

7. The method according to claim 6, wherein said channel definition
 2 further includes an identified time for transmission of said selected packets.

1 9. The method according to claim 8 wherein said user traffic is
2 comprised of voice traffic.

Year	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

1 11. The method according to claim 1, further comprising the step of
2 converting between a packet based backhaul signal and a non-packet based ground
3 link signal.

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1 13. In a wireless cellular communication system comprising a base station
2 and a repeater communicating over a wireless backhaul link for communicating
3 with a plurality of mobile subscribers, a system for improved backhaul efficiency,
4 comprising:

5 a structure for dynamically assigning for said backhaul link at least one
6 packet channel for transmission of selected packets on a backhaul signal for a
7 subscriber, said at least one packet channel comprising at least an RF frequency
8 and a channel definition; and

9 structure for transmitting said selected packets on said at least one
10 packet channel between said repeater and said base station.

1 14. The system according to claim 1, further comprising a structure for
2 performing said assigning step in response to a request for communicating over
3 said backhaul signal for one of said plurality of mobile subscribers.

1 15. The system according to claim 14, wherein said request include a data
2 priority field.

1 16. The system according to claim 15, further comprising a structure for
2 comparing wherein said data priority fields are compared to determine whether to
3 terminate transmission of a lower priority transmission to allow transmission of a
4 higher priority transmission.

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a1 1 17. The system according to claim 13, further comprising a structure for
2 dynamically reassigning at least a portion of said assigned packet channel for
3 transmission of a second backhaul signal.

1 18. The system according to claim 13, wherein said channel definition
2 includes a set of parameters which define said packet channel, said parameters
3 comprising at least one of:

4 a. a number of said selected packets which can be sent over said
5 assigned packet channel; and

6 b. a number frames allocated for transmission of said selected
7 packets.

1 19. The system according to claim 18, wherein said channel definition
2 further includes an identified time for transmission of said selected packets.

1 20. The system according to claim 18, wherein said backhaul signal
2 comprises at least one selected from the group consisting of user traffic and
3 control data.

1 21. The system according to claim 20, wherein said user traffic is
2 comprised of voice traffic.

1 22. The system according to claim 13, further comprising a structure for
2 transmitting said packets over said backhaul link using a higher order modulation as
3 compared to a ground link signal between said at least one repeater and said
4 subscriber.

1 23. The system according to claim 13, further comprising a structure for
2 converting between a packet based backhaul signal and a non-packet based ground
3 link signal.

1 24. The system according to claim 13, wherein said at least one repeater
2 comprises a plurality of repeaters, wherein said structure for transmitting said
3 selected packets on one of said at least one packet channel is used to support
4 communications between multiple repeaters selected from said plurality of
5 repeaters and said base station.